

In the Claims

Claims

Claims 1-61 (Canceled).

62. (Previously presented) A method of forming a transistor gate comprising:
forming a gate and a gate oxide layer in overlapping relation, the gate having opposing edges and a central region therebetween;
forming sidewall spacers comprising at least one of the chlorine or fluorine proximate the opposing edges and directly elevationally over the gate oxide layer; and
doping the gate oxide layer within the overlap with at least one of chlorine or fluorine proximate the opposing gate edges and leaving the central region substantially undoped with chlorine and fluorine.

63. (Previously presented) The method of claim 62 wherein the doping provides a dopant concentration in the gate oxide layer proximate the edges from about 1×10^{19} atoms/cm³ to about 1×10^{21} atoms/cm³.

64. (Previously presented) The method of claim 62 further comprising removing portions of the gate oxide layer not overlapping the gate.

65. (Previously presented) The method of claim 62 wherein the doping comprises diffusion doping at least one of chlorine or fluorine from the spacers into the gate oxide layer.

66. (Previously presented) The method of claim 65 further comprising annealing the spacers to provide the diffusion doping.

67. (Previously presented) The method of claim 62 wherein the doping comprises doping with fluorine.

68. (Previously presented) A method of forming a transistor gate comprising the following sequential steps:

forming a gate over a gate oxide layer, the gate having opposing lateral edges and the gate oxide layer provided elevationally below the gate and extending laterally past the lateral edges of the gate;

forming sidewall spacers comprising at least one of chlorine or fluorine proximate the opposing lateral edges; and

diffusion doping at least one of chlorine or fluorine into the gate oxide layer beneath the gate from laterally outward of the gate edges.

69. (Previously presented) The method of claim 68 wherein the doping provides a dopant concentration in the gate oxide layer proximate the edges from about 1×10^{19} atoms/cm³ to about 1×10^{21} atoms/cm³.

70. (Previously presented) The method of claim 68 wherein the doping provides a pair of spaced and opposed concentration regions in the gate oxide which extend laterally inward from the gate edges no more than about 500 Angstroms.

71. (Previously presented) The method of claim 68 wherein the doping provides a pair of spaced and opposed concentration regions in the gate oxide which extend laterally inward from the gate edges no more than about 500 Angstroms, the concentration regions having an average dopant concentration in the gate oxide layer proximate the edges from about 1×10^{19} atoms/cm³ to about 1×10^{21} atoms/cm³.

72. (Previously presented) The method of claim 71 wherein the gate oxide layer between the concentration regions is substantially undoped with chlorine and fluorine.

73. (Previously presented) The method of claim 68 further comprising removing portions of the gate oxide layer not beneath the gate.

74. (Previously presented) The method of claim 68 wherein the diffusion doping comprises annealing the sidewall spacers.

75. (Previously presented) The method of claim 68 wherein the diffusion doping comprises diffusion doping fluorine.

Claims 76-79 (Canceled).

80. (Previously presented) The method of claim 62 wherein the doping the gate oxide layer with the at least one of chlorine or fluorine provides a concentration of chlorine or fluorine effective to diminish hot carrier effects.

81. (Previously presented) The method of claim 68 wherein the diffusion doping the at least one of chlorine or fluorine into the gate oxide layer provides a concentration of chlorine or fluorine which effective to diminish hot carrier effects.

Claims 82-86 (Canceled).

87. (Previously presented) The method of claim 68 wherein the sidewall spacers are formed directly over the gate oxide layer.

Claim 88-92 (Canceled).

93. (Previously presented) The method of claim 62 further comprising providing a substrate having an upper surface, and wherein the forming of the sidewall spacers comprises forming the sidewall spacers directly over the gate oxide layer in a direction extending perpendicularly to the upper surface of the substrate.

94. (Previously presented) The method of claim 62 further comprising providing a substrate supporting the gate oxide layer, and wherein the gate oxide layer is provided intermediate the substrate and spacers.

95. (Previously presented) The method of claim 62 further comprising providing a substrate supporting the gate oxide layer, and wherein an entirety of the spacers is spaced from the substrate.

96. (Previously presented) The method of claim 68 wherein the forming the spacers comprises forming the spacers directly over the extending lateral portion of the gate oxide layer.

97. (Previously presented) The method of claim 68 further comprising providing a substrate supporting the gate oxide layer, and wherein an entirety of the spacers is spaced from the substrate.

98. (Previously presented) The method of claim 68 further comprising providing a substrate having an upper surface, and wherein the forming of the sidewall spacers comprises forming the sidewall spacers directly over the gate oxide layer in a direction extending perpendicularly to the upper surface of the substrate.

Claims 99-103 (Canceled).